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ARE ANIMALS AUTOMATONS?

PROF. HUXLEY, in his address "Are Animals Automations?" combats the view of Descartes that animals are mere machines, having no feelings. Descartes, says Prof. Huxley, was led by some of his speculations to believe that beasts had no soul, and consequently, according to his notion, could have no true mental operation, and no consciousness; and thus, his two ideas harmonizing together, be developed that famous hypothesis of the automation of brutes, which is the main subject of my present discourse. What Descartes meant by this was that animals are absolutely machines, as if they were mills or barrel-organs; that they have no feelings; that a dog does not hear, and does not smell, but that the impression which thus gave rise to those states of consciousness in the dog, gave rise, by a mechanical reflex process, to actions which correspond to those which we perform when we do smell, and do taste, and do see. Suppose an experiment. Suppose that all that is taken away of the brain of a frog is what we call the hemisphere, the most anterior part of the brain. If that operation is properly performed, very quickly and very skillfully, the frog may be kept in a state of full bodily vigor for months, or it may be for years; but it will sit forever in the

same spot. It sees nothing; it hears nothing. It will starve sooner than feed itself, although if food is put into its mouth it swallows it. On irritation it jumps or walks; if thrown into the water it swims.

But the most remarkable thing that it does is this: you put it in the flat of your hand, it sits there, crouched, perfectly quiet, and would sit there forever. Then if you incline your hand, doing it very gently and slowly, so that the frog would naturally tend to slip off, you feel the creature's fore paws getting a little slowly on to the edge of your hand until he can just hold himself there, so that he does not fall; then, if you turn your hand, he mounts up with great care and deliberation, putting one leg in front and then another, until he balances himself with perfect precision upon the edge of your hand; then if you turn your hand over he goes through the opposite set of operations until he comes to sit in perfect security upon the back of your hand. The doing of all this requires a delicacy of co-ordination, and an adjustment of the muscular apparatus of the body which is only comparable to that of a rope-dancer among ourselves; in truth, a frog is an animal very poorly constructed for rope-dancing, and on the whole we may give him rather more credit than we should to a human dancer. These movements are performed with the utmost steadiness and precision, and you may vary the position of your hand, and the frog, so long as you are reasonably slow in your movements, will work backward and forward like a clock.

And what is still more remarkable is this: that if you put him on a table, and put a book between him and the light, and give him a little jog behind, he will jump—take a long jump very possibly—but he won't jump against the book; he will jump to the right or to the left, but he will get out of the way, showing that although he is absolutely insensible to ordinary impressions of light, there is still a something which passes through the sensory nerve, acts upon the machinery and his nervous system, and causes it to adapt itself to the proper action.

I need not say that since those days of commencing anatomical science when criminals were handed over to the

doctors, we cannot make experiments on human beings, but sometimes they are made for us, and made in a very remarkable manner. That operation called war is a great series of physiological experiments, and sometimes it happens that these physiological experiments bear very remarkable fruit. A French soldier, a sergeant, was wounded in the battle of Barcilles. The man was shot in what we call the left parietal bone. The bullet, I presume, glanced off, but it fractured the bone. He had enough vigor left to send his bayonet through the Prussian who shot him. Then he wandered a few hundred yards out of the village, where he was picked up and taken to the hospital, where he remained some time. When he came to himself, as usual in such cases of injury, he was paralyzed on the opposite side of his body, that is to say, the right arm and leg were completely paralyzed. That state of things lasted, I think, for the better part of two years, but sooner or later he recovered from it, and now he is able to walk about with activity, and only by careful measurement can any difference between the two sides of his body be ascertained.

At present this man lives two lives, a normal life and an abnormal life. In his normal life he is perfectly well, cheerful, and a capital hospital attendant, does all his work well, and is a respectable, well conducted man. This normal life lasts for about seven and twenty days, or thereabouts, out of every month; but for a day or two in each month—generally at intervals of about that time—he passes into another life, suddenly, and without warning or intimation. In this life he is still active, goes about just as usual, and is to all appearance just the same man as before; goes to bed, and undresses himself, gets up, makes his cigarette and smokes it, and eats and drinks. But in this condition he neither sees, nor hears, nor tastes, nor smells, nor is he conscious of anything whatever, and has only one sense organ in a state of activity—viz., that of touch, which is exceedingly delicate. If you put an obstacle in his way he knocks against it, feels it, and goes to the one side. If you push him in any direction he goes straight on, illustrating, as well as he can, the first law of motion. You see I have said he makes his cigarettes, but you may make his tobacco of

shavings or of anything else you like, and still he will go on making his cigarettes as usual. His action is purely mechanical. As I said, he feeds voraciously, but whether you give him aloes, or assafoetida, or the nicest thing possible, it is all the same to him.

The man is in a condition absolutely parallel to that of the frog, and no doubt when he is in this condition, the functions of his cerebral hemisphere are at any rate largely annihilated. He is very nearly—I don't say wholly, but very nearly—in the condition of an animal in which the cerebral hemispheres are not entirely extirpated, but very largely damaged. And his state is wonderfully interesting to me, for it bears on the phenomena of mesmerism, of which I saw a good deal when I was a young man. In this state he is capable of performing all sorts of actions on mere suggestions—as, for example, he dropped his cane, and a person near him put it into his hand, and the feeling of the end of the cane evidently produced in him those molecular changes of the brain which, had he possessed consciousness, would have given rise to the idea of his rifle; for he threw himself on his face, began feeling about for his cartouch, went through the motions of touching his gun, and shouted out to an imaginary comrade: "Here they are, a score of them; but we will give a good account of them." This paper to which I refer is full of the most remarkable examples of this kind, and what is the most remarkable fact of all this is the modifications which this injury has made in the man's moral nature. In his normal life he is one of the most upright and honest of men. In his abnormal state, however, he is an inveterate thief. He will steal everything he can lay his hands upon, and if he cannot steal anything else, he will steal his own things and hide them away.

Now, if Descartes had had this fact before him, need I tell you that his theory of animal automatism would have been erroneously strengthened? He would have said: "Here I show you a case of a man performing actions evidently more complicated and mostly more rational than any of the ordinary operations of animals; and yet you have positive proof that these actions are merely mechanical. What, then, have you to urge against my doctrine that the whole animal world is

in that condition, and that—to use the very correct words of Father Malebranch—‘Thus in dogs, cats, and other animals, there is neither intelligence nor spiritual soul as we understand the matter commonly; they eat without pleasure—they cry without pain—they grow without knowing it—they desire nothing, they know nothing; and if they act with dexterity and in a manner which indicates intelligence, it is because God, having made them with the intention of preserving them, has constructed them in such manner that they escape organically without knowing it, everything which could injure them, and which they seemed to fear.’”

But I must say for myself—looking at the matter on the ground of analogy—taking into account that great doctrine of continuity which forbids one to suppose that any natural phenomena can come into existence suddenly and without some precedent, gradual modification tending toward it—taking that great doctrine into account (and everything we know of science tends to confirm it,) and taking into account on the other hand, the incontrovertible fact that the lower animals which possess brains at all possess, at any rate in rudiments, a part of the brain which we have every reason to believe is the organ of consciousness in ourselves, then it seems vastly more probable that the lower animals, although they may not possess that sort of consciousness which we have ourselves, yet have it in a form proportional to the comparative development of the organ of that consciousness, and foreshadow more or less dimly those feelings which we possess ourselves. I think that is, probably, the most rational conclusion that can be come to. It has this advantage, that it relieves us of the very terrible consequence of making any mistake on this subject. I must confess that, looking at that terrible struggle for existence which is everywhere going on in the animal world, and considering the frightful quantity of pain which must be given and received in every part of the animal world, I say that it is a consideration which would induce me wholly to adopt the views of Descartes. I must confess I think it on the whole much better to err on the right side, and not to concur with Descartes on this point.

But let me point out to you that, although we may come

to the conclusion that Descartes was wrong in supposing that animals are insensible machines, it does not in the slightest degree follow that they are not sensitive and conscious automata; in fact, that is the view which is more or less clearly in the minds of every one of us. When we talk of the lower animals being provided with instinct, and not with reason, what we really mean is that, although they are sensitive, and although they are conscious, yet they do not act mechanically, and that their indifferent states of consciousness, their sensations, their thoughts (if they have them), their volitions (if they have them), are the products and consequences of the mechanical arrangements. I must confess that this popular view is to my mind the only one which can be scientifically adopted.

We are bound by everything we know of the operations of the nervous system to believe that when a certain molecular change is brought about in the central part of the nervous system that that change, in some way utterly unknown to us, causes that state of consciousness that we term a sensation. It is not to be doubted that the impression excited by these motions which give rise to sensation leaves in the brain molecular changes which answer to what Haller called "*vestigia rerum*," and which that great thinker, David Hartley, termed "*Vibratiuncles*," which we might term sensigenous molecular, and which constitute the physical foundation of memory. Those same changes gave rise naturally to conditions of pleasure and pain, and to those emotions which in ourselves we call volition. I have no doubt that this is the relation between the physical processes of the animal and his mental processes. In each case it follows inevitably that these states of consciousness can have no sort of relation or causation to the motions of the muscles of the body. The volitions of animals will be simply states of emotion which precede their actions. The only conclusion, then, at which there seems any good ground for arriving is that animals are machines, but that they are conscious machines.

EDUCATIONAL PROVISIONS OF THE
CIVIL RIGHTS BILL.

THE Civil Rights Bill which has passed the U. S. Senate, and is to come up for the consideration of the House of Representatives when Congress assembles, promises to be an element of no little discord. While the measure originated with some of the leaders of the Republican party, it is asserted that not only is the President opposed to the bill, but a large number of the rank and file of the Republican party regard it as unwise and calculated to arouse slumbering animosities, and to force upon the country issues which ought to be kept in the background. That provision of the Civil Rights Bill which provides for equality in the public schools, naturally awakens the most opposition. The whites of the South are almost unanimously opposed to the bill, mainly on account of this provision. The *Richmond Enquirer* declares "the passage of the Civil Rights Bill will not only destroy our admirable and successful school system, but it will also work the utter ruin of our University or Military Institute and our Agricultural College." Justly or unjustly, these views are generally shared by the whites in the Southern States. Furthermore, the more intelligent blacks, it is believed, do not care for those provisions of the Civil Rights Bill looking to equality in schools, preferring to be educated by themselves.

Porte Crayon, who certainly cannot be charged with being unfriendly to the negro, takes this view of the case in his recent entertaining paper, in *Harpers' Monthly*, on "Negro Schools." The common school establishment of West Virginia provides for the separate education of whites and blacks. Porte Crayon says: "Notwithstanding the snarls of an impracticable philanthropy, this provision is more eagerly desired and approved by the blacks themselves than even by the whites. The preference for preachers and teachers of their own race is almost universal among the blacks. Their aversion to co-education and mixed schools is now decided, and better supported by reason than is the prejudice of the whites. The undevel-

oped and untrained mind naturally shrinks from competition with real or imagined superiority, and even the humility engendered by ages of slavery and ignorance will unwillingly endure, certainly not desire, the open scorn or contemptuous tolerance which it must face in forced companionship."

The law makers at Washington should give the matter long and thoughtful deliberation before endeavoring, by any sweeping enactment, to force the whites and blacks into the same public schools. We believe that, left to themselves they will best regulate their school affairs.

HOW TO TEACH.* *Eighth Grade.*

MENTAL ARITHMETIC.—In the Eighth Grade the answers to the questions in Mental Arithmetic should be simple and concise. The language used should be sufficient to render the solution of the example, and the answer to it, clearly intelligible to a listener, yet so brief as not to retard, unnecessarily, the process of mental calculation. Appropriate forms for answering questions in Mental Arithmetic, in the Eighth Grade, may be seen in the following examples:

How many are six apples and three apples? *Ans.*—Six apples and three apples are nine apples.

If a coat cost \$15, and a hat \$5, how much will both cost? *Ans.*—Both will cost the sum of \$15 and \$5, which is \$20.

Henry had 8 marbles and bought 4 more; how many marbles had he then? *Ans.*—Henry then had the sum of 8 marbles and 4 marbles, which is 12 marbles.

A boy had 9 apples and gave away 5 of them; how many apples had he left? *Ans.*—He had 4 apples left; because, when 5 apples are taken from 9 apples, 4 apples will remain.

MULTIPLICATION TABLE.—In presenting the Multiplication Table, it is very desirable that each step be thoroughly mastered before taking the succeeding one. This table may

* From "How to Teach. A Manual of Methods."

be illustrated first by means of balls on the numeral frame, by arranging the balls in groups of *twos*, then of *threes*. When the groups of *twos* have been illustrated by the balls, the teacher may write the table of twos on the blackboard, thus:

<i>First Form.</i>	<i>Second Form.</i>	<i>First Form.</i>
2 times 2 are 4	$3 \times 2 = 6$	$2 \times 3 = 6$
3 " 2 " 6	$6 \times 2 = 12$	$3 \times 3 = 9$
4 " 2 " 8	$9 \times 2 = 18$	$4 \times 3 = 12$
5 " 2 " 10	$4 \times 2 = 8$	$5 \times 3 = 15$
6 " 2 " 12	$7 \times 2 = 14$	$6 \times 3 = 18$
7 " 2 " 14, etc.	$5 \times 2 = 10, \text{ etc.}$	$7 \times 3 = 21, \text{ etc.}$

On placing the *Second Form* before the class for the first time, the teacher should explain the use of the *signs* \times and $=$. The pupils may be told to read the sign of multiplication the same as the word "times," and the *sign of equality* the same as "are."

Let the pupils copy and learn the *First Form*, so as to repeat it, both forward and backward. Afterward place the *Second Form* on the blackboard, and let the pupils give each answer orally; also copy the table and write the answers. When the table of *twos* has been learned in both forms, teach the table of *threes* in the *First Form*, then in the *Second Form*, and afterward *review* both of them, in combination, in a *Third Form*, somewhat as follows:

Third Form.

$4 \times 2 =$	$8 \times 3 =$	$9 \times 3 =$	$4 \times 3 =$
$5 \times 3 =$	$5 \times 2 =$	$8 \times 2 =$	$6 \times 3 =$
$9 \times 2 =$	$7 \times 3 =$	$2 \times 6 =$	$7 \times 2 =$
$2 \times 3 =$	$6 \times 2 =$	$3 \times 4 =$	$3 \times 9 =$

All the tables may be taught on the same plan—first in order, then out of order, then by combination with the tables previously learned. New tables should not be presented before the pupils have learned thoroughly each preceding one through the *three forms*.

ROMAN NUMBERS.—In the Eighth Grade, the Key to Roman Numbers should be explained to the pupils, and numerous applications of it made to a variety of combina-

tions, viz.: When letters representing equal values stand side by side, and when a letter representing a smaller number stands on the *right-hand* side of one representing a larger number, the values of each are to be added, as II *two*, XX *twenty*, VI *six*, XV *fifteen*, LX *sixty*, XXX *thirty*. When the letter representing a smaller number stands on the *left-hand* side of one representing a larger number, the value of the *left-hand* letter is to be taken from the value of the *right-hand* letter, as, the value of I is to be taken from the value of V in the combination IV, which gives *four*, the number represented by IV; the value of X taken from the value of L in XL gives *forty* as the number represented by XL, etc. Training the pupils in numerous applications of this Key will save much of the time usually spent in memorizing the Roman Numbers. It will be well to give unusual combinations, occasionally, as—VL; VC; VX; VV; XXXX; LC; XLLV; etc., and request the pupils to apply the Key and tell what number each stands for.

OBJECT LESSONS.

FORM.—Special care should be taken, in teaching various Forms and Solids, to cause the pupils to discover the given shape in other objects than those shown by the teacher from the set of "Object-Teaching Forms." For the accomplishment of this purpose frequent reviews should be had, without presenting the forms which represent the shapes that have already been learned, when the pupils may be requested to mention several objects of the given shapes.

Lead the pupils to observe that all *prisms* have oblong sides, and all *pyramids* triangular sides; that prisms differ in the number of their sides, and in the shape of their ends; that pyramids differ in the number of their sides, and in the shape of their bases.

Lines and Angles.—In teaching pupils what constitutes parallel lines, lead them to notice the fact that the lines are *side-by-side*; that they are the *same distance apart at all opposite points*; afterward, in a subsequent grade, they can easily be led to observe that both lines extend in the same direction; also that they can never meet.

In previous grades, the pupils have become familiar with the terms sharp, square, and blunt, as applied to corners; use this knowledge to illustrate the different kinds of angles, and give the terms *acute*, *right*, *obtuse*, to be applied to angles, instead of sharp, square, and blunt. In explaining the terms relative to lines, angles, diameters, etc., each of them should be illustrated on the blackboard, and the pupils also required to represent them on their slates.

COLOR.—All the lessons on Color should be illustrated with "Color-Charts," "Color-Cubes," "Colored Cards," pieces of ribbon, silk, worsted, or other colored objects; also with good water-colors. Care should be taken to make the pupils understand that by mixing two Primary colors, a Secondary color will be produced; also that no Primary color can be formed by mixing two Secondary colors. They should also be taught which Primary colors will produce each of the secondary colors; and what two Primary colors each Secondary color contains.

HUMAN BODY.—It is important that the pupils should learn to point out the location of those bones and other parts of the body for which they are taught names and uses.

ANIMALS.—The lessons on animals should at first be conversational, and of such a character as to lead the children to notice, when away from school, the various kinds of movements of different animals, as, walking, running, jumping, hopping, flying, swimming, etc.; so that they may be able to tell what animals move in a given manner.

After the teacher has led the children to observe the different classes of animals, as beasts, birds, fishes, etc., by showing them pictures of each, let them be requested to give the names of some animals of each class which they have seen. The names thus given might be written on the blackboard in groups corresponding to their several classes.

During these lessons on animals, let the names of those used for food, and of their flesh, be written on the blackboard as the children mention them, and the spelling of each be taught.

PLANTS.—After talking with the children about different kinds of flowers, plants, grains, fruits, trees, etc., which they have seen, and after they are able to name several of those most common, their attention may be directed to different parts of trees, as, roots, trunk, branches, limbs, leaves, etc. The teacher will find efficient aid in presenting this subject, by the use of "PRANG'S *Natural History Series*, for Plants."

OBJECTS.—Pupils should be led to point out and name the parts of common objects, to tell the shape of the parts, and the uses, color, etc., of the objects. This exercise should be so conducted as to give the children the ability to describe readily objects which they see.

Objects having special *qualities* in a prominent degree, should be shown, and the pupils led to observe a given quality in several objects, as a means of teaching them to recognize the same quality whenever it may come within their observation. The spelling of the words representing the objects, their parts, uses, color, and qualities, may be taught.

DRAWING AND WRITING.

ON SLATES.—All necessary explanations and illustrations as to the manner of drawing figures, the formation of small letters and capitals, should be made by the teacher from the blackboard, first to the whole class; afterward, attention may be directed more to the work of individuals of the class, for the purpose of giving special instruction.

Let the teacher of the class select, each day, six slates from those pupils who have made the most commendable improvement in drawing and writing, and place them on her desk for inspection by the class. If properly managed, this plan will prove a good incentive to improvement in neatness in the drawing and writing.

Use of Pencils.—The pupils should not be allowed to write with short pencils. Particular care must be taken as to methods of holding both pencil and pen, also to the position of the body while writing and drawing, to avoid permanent curvature of the spine from bending sideways; and serious injury to the eyesight from inclining the head too far forward, and holding it too near the desk.

MANAGEMENT.

PHYSICAL TRAINING.—The pupils in all the grades should be exercised daily in such a manner as to expand the lungs, develop the muscles, and impart an easy and graceful carriage to the body. Calisthenic exercises may be employed for the attainment of these objects.

Five minutes spent once an hour, or even more frequently, in simple changes of the position of the body, by requiring the school or class to stand and to sit together three or four times in succession, also to exercise the arms briskly, will do much for the physical comfort of pupils, and even increase the progress in their studies.

The necessity of pure air in a school-room is a matter too serious to be neglected by any teacher for a single hour. Yet quite too commonly, even where the means for securing it have been provided, teachers carelessly neglect ventilation.

COLLEGE BENEFACTIONS DURING 1874.

OWING probably to the hard times resulting from the financial panic, colleges and other institutions of learning have not received their wonted benefactions during the past year. In fact, the number of gifts and legacies of all kinds has been small when compared with some other years. Commodore Vanderbilt has given one hundred thousand dollars more to his Tennessee University. The will of the late Asa Whitney, the Philadelphia Car Wheel Manufacturer, gives fifty thousand dollars to the trustees of the Philadelphia University, for the endowment of a professorship of Dynamical Engineering. Gov. Coburn, of Maine, recently promised fifty thousand dollars to Colby University, on condition that a like amount should be raised for endowing two academies in different parts of the State as feeders to the University: this condition has been complied with. Horatio Nelson Slater has given twenty-five thousand dollars to Brown University. He had previously given twenty-eight thousand dollars. The whole amount of the

University's funds of all kinds, exclusive of real estate, is \$637,814.95.

The original plan of the "Graduates Fund" of Harvard College was to raise five hundred thousand dollars within ten years. The Executive Committee report that a little more than half the time has passed, and they have as yet received only \$87,173.93. A Harvard graduate proposes to his brother Alumni that each one insure his life for five hundred dollars for the benefit of the College. Gifts to the amount of two hundred thousand dollars have been received by Union College during the year. The gymnasium building has been completed, and two beautiful houses for the residence of college officers, have been built. The Alumni propose to endow the professorships held by Drs. Foster, Lewis and Jackson, with the sum of thirty thousand dollars each.

It is proposed to increase the Fund of Williams College to five hundred thousand dollars. The funds last year amounted to \$290,000. The additional increase, assuming it is raised, is to be set apart in different sums for the following purposes: Seventy thousand dollars to increase the endowment of professorships already established; thirty-five thousand dollars for professorships of Physical Training and Vocal Culture; twenty thousand dollars for increase and care of library; fifteen thousand dollars for care of grounds and buildings; twenty-five thousand dollars for immediate use in observatory, cabinet and other buildings, and fifty thousand dollars for general expenses.

James Lick, of San Francisco, has conveyed nearly all his property, amounting to two millions of dollars, to educational and charitable objects. His first gift is seven hundred thousand dollars for an observatory and a powerful telescope, to be erected on the summit of the Sierra mountains, on land donated by Mr. Lick. He likewise gives three hundred thousand dollars for establishing the "California School of Mechanical Arts," open to all youths born in the State. He also gives twenty-five thousand dollars to the Protestant Orphan Asylum of San Francisco; twenty-five thousand dollars for founding an Orphan Asylum near San Jose, and two hundred and fifty-five thousand dollars

(divided in equal portions) to the California Academy of Sciences, and the Society of California Pioneers, for the purchase of apparatus, the erection of buildings, etc. He furthermore gives one hundred and fifty thousand dollars for erecting and maintaining free baths in San Francisco, and a like sum for a bronze monument to the memory of Francis Scott Key, the author of the Star Spangled Banner. Mr. Lick is a native of Pennsylvania, and made his money in stock raising and gold mining.

VENTILATION.

SO much has been said of the lack of proper ventilation in our school-houses that one would suppose that the matter would be attended to. It has not however received sufficient consideration. There has been some improvement, but the large majority of our school-houses, and especially those in the country, are insufficiently supplied with pure air. The reason of this is hard to find. The air is to be had for nothing, and ventilating apparatus is comparatively inexpensive. The matter is neglected probably because those who have in charge the building of school-houses do not think it worth while to spend money for air. More substantial and tangible things claim their attention. A hundred dollars spent on the ornamentation of the school-house doors and windows shows to much better advantage than that amount invested in ventilating cowls. Moreover the evil effects of bad air are slow in manifesting themselves, and do not therefore appear real. To the committee-men appeals have been vain, our only hope of a reform in this direction is in the teachers.

The teacher is usually a person of influence, and, especially in the country, likely to be consulted on matters of importance to the school. We advise you then, teacher, to insist on having your room thoroughly ventilated. If no money is to be obtained from the district treasury for that purpose, some simple method of letting in fresh air may be

resorted to. In summer it is of course an easy matter to keep the doors and windows open. In winter it is somewhat more difficult, but fresh air must be obtained. Twice during the day, besides the regular noon intermission, the children can be sent out for a few moments while the doors and windows are opened. The pupils may find the room cold on their return, and this is a great objection to this method, but it is better to breathe pure air and be cold for a time, than to be kept warm in a vitiated atmosphere.

If a window is so situated that a draft of air can be admitted without blowing on the heads of the children, it may be left open at the top. It is especially good if it can be arranged to have the air on its entrance into the room strike the stove. The peculiar construction of the school-house must, in a measure, determine how it shall be ventilated. We can lay down only one general rule ; get fresh air, but avoid a draft.

We would like too to urge teachers, in whose rooms some ventilating apparatus has been placed, to test it to see if it really introduces a supply of pure air. This may be done by holding a handkerchief before the opening and noticing if the current is passing in or out. A committee appointed to report on some of the New York City schools found, that although a large amount of money had been expended on ventilation, still pure air was not obtained. Openings in the ceiling admitted the hot, impure air to the chamber under the roof, but instead of being conducted out by the escapes, it became cooled by contact with the cold roof and fell back into the room. So it is important to see to it that any ventilating apparatus that may have been furnished is effective.

But we would not have the teacher's care for the health of pupils end with the school hours. Many children sleep in small rooms which are not aired once a week ; often because the occupants of the rooms do not know that it is necessary to do so. A word from the teacher may do great good in opening the windows. Appeals to building committees have been almost altogether without effect, so we turn to the teachers, to beg them to see to it that children have a full supply of fresh air.

GEOGRAPHICAL DISCOVERIES IN 1873 AND 1874.

THE remaining field for the explorer comprises the Arctic and Antarctic regions, the greater part of Africa, Central Asia, the largest half of Australia, the islands of the East Indian Archipelago, a vast tract in South America, and a large portion of our Western Plains. We present a brief review of the work done in each of these sections during the eighteen months ending September, 1874.

The Arctic Ocean has been explored, through the intrepidity of American seamen, to a point beyond any ever reached by ship before. The "Polaris," under Captain Hall, penetrated by way of Smith's Sound, the route advocated by American explorers, to latitude $82^{\circ} 16'$. Here she was stopped on the 30th of August, 1872, by floating ice, being a little more than four hundred miles from the Pole. There was some difference of opinion regarding the possibility of pushing farther north, some of the officers contending that it was possible, and others that it was not. Capt. Hall died on the 8th of November, 1872, from the effects of exposure, undergone in an attempt to penetrate farther north by sleigh. The ship was shortly after abandoned by the crew, which, after encountering great hardships, reached home in safety last spring. One of the most remarkable facts made known by the expedition was the greater abundance of animal life found to exist as the ship proceeded farther north. Willows of comparatively large size, sorrel and grasses of several kinds, as well as many flowers of different colors were also observed in abundance at Polaris Bay, latitude 82° . Garnets of unusual size were likewise found. In the summer of 1873, Mr. B. L. Smith, in the "Diana," succeeded in reaching latitude $80^{\circ} 56'$, longitude 70° E., and determined North Cape to be an island. The "Tegethof," of the Austrian expedition for the exploration of the sea east of Nova Zembla, has not been heard of since August, 1872, and may have solved the mystery of the "open sea." Nothing has been accomplished in the Antarctic regions.

Much has been contributed during the past year to our

knowledge of the western part of our country. Some remarkable ruins on the Rio Chaco, in New Mexico, have been visited and described by General James H. Simpson, U. S. A. They consist of massive walls of gray sand-stone, in some places still standing at a height of four stories. The exterior face of the wall is composed of thin courses of sand-stone, with intervals which are filled with laminar stones of the minutest thinness, so placed as to present the appearance of a magnificent piece of mosaic work. The mortar shows no trace of lime, and appears to have been made of the common earth. The regular arch is wanting in these walls, horizontal slabs of wood or stone forming the lintels of windows and doors. The ground floor is divided into numerous small apartments connected by diminutive openings, many of which are not more than two and a half feet square. The interior of one of these ruins measures seven hundred feet in circumference, and the present height of wall twenty-five feet, while the *débris* at its base shows it to have been originally higher. These ruins are evidently the work of a people far superior to the Indians now surrounding them, who, in fact, know nothing of their origin. Humboldt has located near these ruins the first resting-place of the Aztecs in their migration southward.

Colonel E. C. Boudinot, a highly cultivated Cherokee Indian, in an address last winter before the American Geographical Society, gave some interesting information regarding the inhabitants of Indian Territory. These comprise the Cherokees, Creeks, Choctaws, Seminoles, and Chickasaws, known as the five civilized tribes. Each tribe has a written Constitution and code of laws, as well as a Legislature and civil government of its own. The lands, however, are held in common, and no one tribe can dispose of its portion without the consent of the others. They have a well-organized free school system, comprising six high and eighty-eight primary schools. Two high school buildings in the Cherokee nation cost \$80,000 each. The Chickasaws send a number of their youth of both sexes to the best schools in the States, at an annual public expense of over \$17,000. The Cherokees have an original alphabet of their own, consisting of seventy-eight characters, invented in 1822, by one of them, a man named Sequoyah. Just after this invention a newspaper called the *Cherokee Advocate* was established, and printed one-half in

Cherokee, the other in English. This paper still lives as the *Cherokee Phoenix*. Indian Territory possesses great advantages of soil and climate. Corn, wheat, and fruit are produced in every part, and cotton also in the south. The grazing facilities are great. Coal, iron, lead, zinc, and copper, and salt and petroleum springs abound.

Dr. F. V. Hayden, of the United States Geological and Geographical Survey of the Territories, has explored the eastern half of the mountainous portion of Colorado. This region forms "the centre of elevation in the great chain of the Rocky Mountains." "From the summit of Mount Lincoln, the eye sweeps over a wilderness of high peaks, the like of which can be found only in the Himalayas or the Andes." In view from this point are more than one hundred and fifty peaks, none of which are below thirteen thousand feet, while fifty are at least fourteen thousand.

There were two expeditions to the Yellowstone, one under General Stanley, chiefly of a military character, to protect the work upon the line of the Northern Pacific Railroad, and the other under Captain Jones, the explorer of the Utah Mountains. The first passed through the "Bad Lands," a region of desolation extending for two hundred miles. The face presents a continuous succession of hills, with wide chasms and gorges between, "presenting a frightful appearance." The length of the Yellowstone River was ascertained to be about five hundred and fifty miles, three hundred and fifty of which it is inferred will be navigable for steamboats. Coal, iron, and other minerals were found, and some rare species of birds, among them a species of skylark. In some places the expedition came across natural brick yards, where the clay was cracked by the sun into blocks two inches thick by a foot and a half long. General Stanley bridged a gully with these bricks and passed his wagons over safe.

Captain Jones's expedition penetrated what is properly termed the Yellowstone country, the vicinity of the wonderful geyser region in Northern Wyoming, which is hereafter to be the National Park. Its object was to ascertain how this interesting region can be made most accessible to the traveler. The route lay through a rolling and desolate country. On the way an unsuccessful attempt was made to ascend to the summit of a

sharp peak, but from the elevation attained, about twelve thousand feet, the view was "grand and terrible, presenting, as far as the eye could reach, a jagged mass of dark-brown volcanic rocks, black in the shadows of the falling sun." The basin of Yellowstone Lake was found to be abundantly watered, and covered with a dense growth of pine. In the lake there is abundance of animal life. Dr. Hilzínon found animal life in springs of 124° temperature. Frosts occurred during thirteen nights in August, but the vegetation was untouched, the flowers being particularly remarkable for the brilliancy and permanency of their colors. South of the lake a small stream was found which divides into two branches, one of which flows through Yellowstone Lake and the Missouri into the Gulf of Mexico, while the other flows through Snake River to the Pacific.

Lieutenant Wheeler has explored the White Mountains of Arizona and the plateaus bordering them. This region, lying south of latitude 34° and east of longitude 110° , embraces fine farming, grazing, water, fish, and game countries, entirely uninhabited by Indians. It however alternates between fertility and barrenness; in some places want of water makes agriculture impossible, while in others are fine bottom lands, enclosed by mountainous country abounding in fine grass, timber, and grain. The region is rich in precious metals. The country adjoining the Colorado River is probably the hottest in the United States, and is almost destitute of vegetation. The maximum heat in summer is found to be 130° Fahrenheit, and the minimum in winter 25° . The thermometer reaches 90° nearly every day in the year.

The observations of the Yale College Expedition under Prof. Marsh, in the country surrounding Salt Lake, seem to warrant the conclusion that the lake is but the remains of a "vast body of water, equaling in magnitude our great lakes, and that it had formerly a northern outlet." But the most important result of this expedition was the discovery, in the Pliocene formation, of the remains of various species of fossil horses, rhinoceroses, and camels. The most remarkable fact was exhibited in the remains of the horses, which indicate a gradual development from an animal about the size of a fox, and very different in structure and appearance.

In the beginning of the present summer, an expedition to the Black Hills, in Dakota Territory, was organized under Gen. G. A. Custer. The exterior of these hills presents a very forbidding aspect, from which it has been inferred that the interior was equally, if not more, desolate; but Gen. Custer has found it to be anything else. In a dispatch dated Bear Butte, Dakota, August 15, 1874, he says: "In regard to the character of the country enclosed by the Black Hills, I can only repeat what I have stated in previous dispatches. No portion of the United States can boast of a richer or better pasturage, purer water—the natural temperature of which, in mid-summer, as it flows from the earth is 12° above the freezing point—or of greater advantages generally to the farmer or stock-raiser than the Black Hills. Building stone is found in inexhaustible quantities, and wood, fuel, and lumber sufficient for all time to come." The whole country is said, by the same authority, to be covered by the greatest profusion of flowers, many of unclassified species. Game is abundant, and the mineral wealth is such as is likely to create a second California excitement. Gold and silver were found in numerous places in paying quantities. Iron, plumbago, and gypsum were also found, the latter in great quantities. The country is not inhabited by Indians.

Prof. James Orton, of Vassar College, New York, returned, during the year, from his second exploration of the Amazon country, having studied the geology, physical geography, and topography of that region, obtaining a vast amount of new and reliable information. He found that the Upper Amazon (Marañón) has been grossly misrepresented in all the recent maps of Peru. The details of his discoveries have not yet been made public.

Asia has been the theatre of numerous exploring expeditions. One of the most important, in its results, is that of Baron von Richthofens, into the northern provinces of China. In the possession of coal, China is one of the richest countries on the face of the earth. Her coal fields cover four hundred thousand square miles, yet not a single mine is worked. Her supply of iron, also, is inexhaustible.

The Russian Expedition to Khiva has culminated in the addition of the right bank of the Oxus to the Russian dominions, the abolition of slavery there and in Bokhara, and the free

navigation of the Oxus, with free trade. Khiva is an oasis situated in the midst of a desert three hundred feet below the level of the sea. It is about two hundred miles long and seventy-five wide, and has a population of nearly one million. The people are Tartars, engaged, principally, in tilling the soil. They pass most of their time in summer beneath beautiful elms that shade their dwellings. The houses and farmyards are enclosed by rectangular walls from fifteen to twenty feet high, which serve the purpose of defense against the Turcomans, who make frequent raids into the country. The walls are made of mud, which, being molded into huge blocks several feet square, becomes comparatively hard.—*American Educational Annual.*

WOOD BOOKS.—In the museum at Hesse-Cassel, Germany, is a library made from five hundred European trees. The back of each volume is formed of the bark of a tree, the sides of perfect wood, the top of young wood, and the bottom of old. When opened, the book is found to be a box containing the flower, seed, fruit and leaves of the tree, either dried or imitated in wax. At the Melbourne International Exhibition of 1866, Colonel Clamp exhibited specimens of Victoria wood converted into small boxes of book form, according to a design adopted by that gentleman at the Victoria Exhibition of 1851, and then suggested by Baron Ferd. Mueller. Nothing could be more interesting than a library (to speak allegorically) of such imitation books, representing the different timbers of various countries which could be systematically, or alphabetically, or geographically arranged. Australia alone could furnish of such a collection over a thousand volumes. At the Paris exhibition of 1867, Russia showed a similar collection of wooden books cleverly designed, showing the bark as the back binding, and lettered with the popular scientific names of the wood. Each book contained samples of the leaves and fruit of the tree, and a section and shaving, or veneer of the wood.

TWO COUNTRY SCHOOL-MASTERS ON THEIR TRAVELS.

IN the Autumn of 1856 H. B. DeW——, a Massachusetts boy, and myself, entered Oberlin College, Ohio, as Freshmen. The great majority of the ten or twelve hundred students then attending the various departments of Oberlin were in poor circumstances, dependent upon their own efforts for the necessary funds to defray their educational expenses. To accommodate these students, the faculty so arranged the vacations that they could have twelve weeks for teaching during the winter. The end of the fall term, therefore, found my chum [I shall call his name Homer] and myself at a loss what to do with ourselves, and the long stretch of vacation before us. After hitting upon and abandoning half a dozen projects in succession, we finally decided to try our hand at teaching District School. The decision no sooner arrived at, than we started for Van Wert County, in the southern part of the State, where we had heard a decided scarcity of Bibles and school-teachers prevailed. Leaving Oberlin in a snow storm, with light hearts, we rode in the cars for six or seven hours, picturing to ourselves the new experiences in store, and expressing considerable solicitude as to each other's ability to manage a bevy of unruly back-woods urchins. We were mere lads ourselves, just turned eighteen, slightly built, and fitter subjects, in appearance, for the nursery corner than the district school.

About three o'clock in the morning we reached Van Wert village, to find every tavern or "hotel" crowded from ground-floor to ceiling, it being court-week; so we "borrowed" a buffalo robe, and bunked on a table in a bar-room till daylight.

Our host was better supplied with edibles than with sleeping accommodations, so that we experienced no difficulty in satisfying the morning cravings of the inner man. On inquiry, we ascertained that the township we wished to reach was ten miles away. All efforts to procure a public conveyance were fruitless. After long search, however, we

found a very antiquated cutter which, from appearances, had served for many years as a roost for fowls simply. In another place we were fortunate in securing an apology for a horse, with a boy-driver thrown in. Having then provided ourselves with a huge loaf of bread and a colossal sausage, which we devoured as we rode through the village, we started for our unknown destination.

After riding ten miles through a very wild country, and over a road which, in some places, it was difficult to find, we sent the boy back with the horse, and struck into the dense forest, with our carpet-bags slung across our backs. Having traveled for an hour and a half without reaching any settlement, we concluded that we were lost, and subsequent investigation confirmed the conclusion. Darkness was rapidly coming on, and we could elicit no response to our repeated cries for assistance. A little later we could hear the howl of wolves from several different directions. Then the aspect of the situation, which for several hours back had been rapidly changing from gay to grave, became very serious. We concluded that school "prospecting" in the forest was not such an amusing thing after all. Then we, boy like, fell to upbraiding, each declaring that the other was responsible for our getting into such a sad plight. Meanwhile the wolves continued to howl, and we thought we would ascend a tree and roost in some friendly notch for the night, well out of harm's way. Then we remembered having been told that there were many panthers in this forest, and of course concluded that climbing a tree wouldn't answer. We were at a loss what to do. Finally, Homer suggested that we should gather boughs and bushes and build a large fire, which would keep at a distance the hungry wolves, and any stray bear coming in that direction. The suggestion was immediately acted upon. We had luckily provided ourselves with a box of matches before leaving Van Wert village.

As darkness came on it seemed as if the woods were full of "varmints," so many strange noises smote our ears from every direction. But, hark! there was a sound so familiar! how it thrilled every nerve of our being! Reader, if you have ever been placed in such a situation, you can ap-

preciate our joy at hearing the bark of a dog. Without stopping to finish our bower or to light our fire, we started as fast as our legs could carry us, in the direction from whence the sound proceeded. We were soon ankle deep in a swamp or swail, but plunged through, and, after running by the light of the snow on the ground a few hundred yards, emerged in an opening where a forester had built his cabin. A few moments later, and we were drying our feet before a huge fire, over which swung a griddle containing a pancake nearly a foot in diameter. It required only four of them to appease our half famished appetites. We very soon retired, to sleep like logs, after many times thanking husband and wife for their kindness, and bestowing more than one caress upon the dog Rover, who had led us out of the wilderness.

It is my present misfortune to be surrounded on all sides by dogs of every variety and species, who contrive to deprive me of many hours of sleep. Frequently some cur will start all the others in the neighborhood, and they will bay the moon or return one another barks till daybreak. At such times, when with my double barrel breach loader, I am tempted to put an end to at least two dogs' lives, the memory of Rover, how he saved us in those Western wilds, comes back to me, and my heart softens toward the whole canine race.

A few miles' walk the next day, with our hospitable forester as a guide, brought us into the region for which we had started. Two settlements, or rather scattered clearings, wanted teachers, and without stopping to study the "situation" in the least, we engaged ourselves at twenty dollars a month and "found"—that is, boarding round. The examination before County Superintendent Alexander, at Van Wert village, followed. Many years had passed since we had studied the common English branches, and, notwithstanding a good deal of "cramming," we passed the ordeal just by the skin of our teeth. The Superintendent has never known to this day with what awe the two young collegians regarded him, and how near they came to breaking down in their orthography and arithmetic. He looked upon them as educated far above his level; but they were

not the first Freshmen who might easily have been driven to the wall in the English branches.

Armed with our certificates of examination, we returned to the woods, and were soon installed over our respective schools. They were about two miles apart, in a straight line through the forest, and Homer and I made alternate night visits during the week. We soon discovered that we were very deficient in one branch of learning, which was held in the highest repute by our pupils and the settlements generally. I allude to the great art of spelling. Unless able to make ourselves far more proficient, we were in great danger of losing caste and losing our schools, inasmuch as every master was expected to be able to "do" the speller from beginning to end. We contrived to manage everything else but the dreaded spelling-schools. It had always been the custom "in those parts" for the master to accompany and spell with his school in visiting any neighboring districts. We neither of us could pass any such ordeal, and consequently could see nothing but blasted reputations in store for us. There was not a fifteen year old urchin in either school who could not spell both of us down in a jiffy. What were we to do? The ruse by which we saved ourselves I will relate.

One night George —, my oldest scholar, announced to me with an air of pride and satisfaction that, upon the following evening, the school was going over through the woods to spell against my friend's school, and I would be expected to accompany them, and lend a helping hand. I cheerfully [oh, how cheerfully!] acquiesced in the suggestion, and informed George that I would of course be on hand, and we would show the enemy how easily we could flax them. Once in the latter's tent, or rather school-house, George, who stood up to call off our school in order, summoned me to the head. I promptly walked forward, and with an air of supreme confidence—though Homer declares to this day that my legs fairly shook with fear at every step. No sooner, however, had I taken my position, than Homer immediately advanced from his desk at the other end of the room, and protested against my spelling. He wouldn't consent that a teacher should come over from another dis-

trict and spell against his pupils; scholars only should be pitted against scholars, in a contest of this kind. It was in vain that George and others declared that this had invariably been the custom. It was in vain that I myself put in a word. Homer was deaf to all appeals and entreaties. He wouldn't consent that I should spell, and that was the long and short of the matter. I of course took my seat *crest-fallen* and *chagrined*. We laughed ourselves to sleep that night, and upon the following week, when he came over with his school to spell against mine, I of course played the return game upon him—and that was the way both of us continued to avoid spelling all winter, and saved our reputations.

All of the houses or cabins, with but two or three exceptions, contained only one room. It was somewhat embarrassing for us [particularly in the matter of retiring at night] to conform to these primitive ways. I never shall forget the second night we stayed in the region. It was at the house of Mr. Mc—, whose family numbered nine children, of whom seven were daughters, three grown up. Though very weary and almost worn out, we waited and waited until ten o'clock before going to bed, hoping that the female portion of the family at least would go out doors and give us a chance to disrobe. But they had no thought of doing any such thing. Convinced at last of this, we proceeded to doff our garments in exchange for our night-gowns, then quickly sliding between the sheets, we stuffed the ends into our mouths while our sides were shaking with laughter. But what may seem strange to some readers, not the slightest attention was paid by any member of the family to our demise. They seemed to take it as a matter of course. I may remark here that the morals of this community were as correct, as their habits and general mode of life were simple and unadorned. There was an entire absence of those vices which so frequently prevail among peoples who pride themselves upon their cultivation and social attainments. There was a rugged honesty and native morality about them which it would be exceedingly refreshing to find in this after-war period of demoralization.

Soon after our arrival we were invited to participate in a

regular western break-down. The little affair of pleasure occurred in one of the large log-cabins, and afforded matter for entertaining reflections many years afterward. I cannot now, after the lapse of nearly nineteen years, recall that amusing assemblage of young people, with their droll antics, without indulging in a hearty laugh. The principal event of the evening was the leap-frog dance, which never failed to elicit roars of laughter from the lookers-on as often as it was repeated. All the ladies joined hands in a circle as large as the room would allow of. The gentlemen then formed inside, each one prostrating himself on all fours. At a given signal, they would proceed to leap over one another, going round and round in a circle. The ladies, meanwhile, also went round in their circle, keeping hold of one another's hands, and merrily singing. Faster and faster went the leap-frog performers and the whirling ladies as the fiddlers quickened their time, until the dance terminated in a grand pell-mell finale, and each lady bore off her gentleman to the supper table.

As is always the case in new countries, there were very few fruits in the settlement, and vegetables to a certain extent took their place. Almost every morning some one of my little school-girls would bring me a huge turnip, which was received and deposited in my desk for lunch-time, with as many thanks as if it had been an apple or banana. Persons cannot realize how attached they may become to turnips for desert until they have tried this diet.

We saw but very few lamps or candles during our sojourn in the Van Wert forest. Indeed they were a luxury which only the very "first families" indulged in, and then only rarely. The almost universal light consisted of a tea-cup or tin-cup of lard with a burning rag protruding over the side. After a week or more of this experience, we sent to Van Wert village and purchased a couple of dozen of candles, to use as we boarded round from house to house. We soon thought, however, we discovered that the people were rather sensitive on the subject, and we accordingly discontinued their use.

In every border region where Doctors are few and scattered, the people endeavor to care for their own physical

aliments, making very free use of herbs of various kinds. Superstition enters largely into these cures, and it was amusing to note the remedies prescribed for some ills by the Van Wert home Doctors. For example, the following was the cure for scrofula given by one old lady where I was stopping:—Bore a hole into a live oak or elm tree. In this receptacle place a lock of hair cut as near as possible from the center top of the head of the person suffering from scrofula. Then insert a closely-fitting plug. When the bark has grown over the latter, so that it is wholly hidden from sight, the scrofula will disappear from the body of the sufferer, never to reappear again.—This remedy is certainly as sensible and ought to be fully as efficacious as the many “sure cure” patent medicines, whose flaming advertisements now meet the eye in every direction.

Everything went smoothly in our schools for the first few weeks. Though it was hard work, we enjoyed the novelty of the thing, while Saturdays were almost invariably devoted to deer-hunting. As our scholars were most of them pursuing the rudimentary branches, we felt little necessity for studying the lessons in advance. This overconfidence, however, came near costing me my reputation. John Bower, my most advanced pupil, came to me about the middle of the forenoon one day to work out a problem in the double rule of three. A glance at the example convinced me that I was “stumped.” What could I do? It would never answer to let John and the rest of the school see that I was “stuck” on a problem not half way through the arithmetic. I might prepare in such an event to pack up my traps and clear out of the settlement at once. A happy expedient suggested itself to me. It was then near recess time. I would announce recess at once, and at its close, hold a spelling-school until twelve o'clock. This would keep the whole school, including John, employed until I could have an hour's nooning to devote to the problem. I eagerly seized upon the plan of escape thus afforded. As soon as the clock struck twelve, I quietly and unseen, slipped an arithmetic under my coat, walked into the woods about a quarter of a mile, placed a large tree between myself and the school-house, and then proceeded to concentrate my

mind on the problem aforesaid in a way that I never before did concentrate, and never have since. It was the energy of despair; and as good luck would have it, triumphed. When I returned I rung the bell, and John Brown came again to me with his sum to have it solved. I dashed my pencil quickly through the figures, and in a very few moments time returned the problem to him solved, with an air of confidence and *elan* which must have quite won the young man's admiration. After that I was more careful to look ahead on those double-rule-of-three sums, and it was only that very afternoon I discovered another mathematical snag, which would surely have wrecked me, had it not been sighted in time. It was in the shape of a second sum or problem which John reached just as school was closing. After all the scholars had left, I sat down and worked as hard as I could at it for an hour and a half. But all efforts were unavailing. I became satisfied that I was not equal to the situation, and accordingly started through the woods to obtain the assistance of my friend Homer. After supper we put our heads together and worked till nearly midnight, with no better success than I had experienced. There was a very good arithmetician in the house, whose assistance we could have obtained. But that never would have answered. Finally, as the clock struck twelve, Homer went to bed, declaring in spite of my entreaties not to abandon me in that manner, that he wouldn't sit up any longer for all the John Browns and the district schools in that part of the United States. I berated him for several minutes after he had disappeared under the bed-clothes, and then returned to my sum. Fortunately for me, Homer was boarding that week at a frame house [the only one, if I rightly remember, in his district,] so that we had a room to ourselves that night in the second story. Time and again I attempted to awaken Homer through the night, appealing to his friendship and "magnanimity" to help me out of the scrape. But he steadily refused to get up, declaring that it was no use. I may here observe, as an apology for his conduct, that Homer's great forte was sleeping. I have never since met an individual who could do, and do so thoroughly, as many consecutive hours of sleep. Finally, after whip-

ping my brain until half-past four o'clock, to my great joy the solution of the problem suddenly dawned upon me. I rolled into bed, taking good care to give Homer a push against the wall, and came up smiling at the breakfast-table. The owner of the house—I think his name was Mr. Ritch—suggested that we must have retired at a very late hour, and by the wicked twinkle of his eye, I inferred that Homer was going to expose me. But whether such was the case or not, the look which I gave him, accompanied with a terrific pinch under the table, awed him into silence. So annoyed had I already been at his refusal to help me through the problem, that I verily believe I should have broken a plate over his cranium had he then “blown” on me. That night's episode was the only thing I ever laid up against the boy through a long-existing friendship and intimacy, barring his failure to visit me when coming east many years after our college days were over.

THERE are three hundred and twenty-five colleges and universities in the United States, or nine for every State. The projection of new institutions has weakened older ones so that some, like *Union* and *Williams* Colleges, have experienced a disastrous falling off in pupils. Of course no such large number can be successfully maintained, and the work of consolidating institutions cannot be undertaken too soon or prosecuted too vigorously. We are pleased to see that Georgia is leading off in this matter. There are three universities and two colleges in the State. Of course all of these institutions cannot thrive. The Governor of the State has accordingly appointed a Committee to form a plan for uniting them into one central University. If carried out it will give the State a well organized, powerful university of learning, in which she may take a justifiable pride. Unfortunately denominational influences are already at work to prevent this much desired consummation. It is to be hoped, however, that a desire to achieve what is best for the public good will overcome these influences.

NEW LIFE IN EGYPT.

WHILE public attention is engrossed with the events of Western and Central Europe—with the conflicts of parties in France, the struggle with rebellion in Spain, the proceedings of Bismarck against the bishops in Germany—a great African power is being quietly built up on the banks of the Nile and the Mediterranean. It is only now and then that we hear mention of Egypt, and, when we do, it is oftener that reference is made to its antiquities, to the remains or history of the older Egypt, than to its present condition, and its recent rapid strides in material civilization and military power. Every now and then there is a "misunderstanding" between the Egyptian viceroy and his nominal lord, the Grand Turk; the latter objects to the increase of the Egyptian army or navy, or to some action on the part of the viceroy which too plainly asserts his intention to be independent; and, on every such occasion, the viceroy appears to approach a step nearer to the independence he is evidently aiming at.

Ismail Pasha, indeed, is no ordinary man. An Egyptian and a Mohammedan by birth, he is European in education, tastes, and aspirations. He was brought up in France, and spent his youth in the midst of Western civilization. Since his accession to the khédivate he has been gradually loosening the ties which have still bound Egypt in subjection to the Turkish sultan; and, under his vigorous sway, the land of the Ptolemies, the Pharaohs, and the Remeses, has been fast rising to the dignity of a considerable and stable power.

He has ceaselessly pushed railway enterprises, and at this moment a great line is in the process of construction up the Nile Valley, which is destined to penetrate far into the heart of Equatorial Africa; it will not be long, perhaps, before "Cook's tourists" will be taking coupon-tickets for the Albert Nyanza *via* Khartoum. Ismail, less warlike and savage than Mehemet Ali, has devoted himself without rest to these two objects—independence of the Porte, and internal development. He has managed, by bribery and

cajolery, to obtain from the sultan freedom of internal administration, the right to increase his army and navy, and to make treaties with foreign powers, and the alteration of succession, so that his son becomes heir to the khédivate. He has thoroughly reformed his civil service, and has freely employed Europeans and Americans as heads of bureaus, army officers, supervisors of public works, and confidential advisers.

It seems as if civilization, having passed around the world, and reached its limits on the American shores of the Pacific, had begun to return again to its ancient seats in the Orient, to the localities of its remote infancy. There is something romantic in the idea that Egypt, under a succession of enlightened and vigorous viceroys like Ismail Pasha, may become once more a great military power, and a renowned home of the arts. Will Alexandria again be a commercial port, rivaling those of the Atlantic coast; and will the now squalid and effluvious Cairo be revived into another Memphis? For Egypt is already the chief promoter of African conquest. Her territories are gradually broadening southward. Should her prosperity and increase of wealth and power continue, Abyssinia will in time be hers, and, likely enough, the other vast and savage countries lying along the east coast of the continent.

In one respect, however, Ismail Pasha betrays a truly Oriental perfidy and immorality. He keeps the *fellahs* in their ancient condition of abject servitude and ignorance; and, while pretending to acquiesce in the abolition of the barbarous slave traffic in which his subjects engage, he refuses either to actually suppress it, or to allow such English crusaders as Sir Samuel Baker and Colonel Stanton to give it the *coup de grace*, which, with his hearty co-operation, they might do without great difficulty. There is no quarter of the world—not even Zanzibar or the Australasian Islands—where the slave traffic is carried on more audaciously, openly, and barbarously, than on the northern confines of Ismail Pasha's dominions; and it is gratifying to learn that England, in her benevolent character of universal suppressor of the slave trade, has resolved to leave no effort untried to abolish it.

Once freed of this evil, and the *fellahs* once accorded the condition which the Russian serfs, thanks to Alexander II., have attained, there seems to be no reason why Egypt should not in a very few years take high and independent rank among the powers. The Egyptians are really a deft and capable people, and probably only need freedom from Turkish control, and an extended period of vigorous government like that of Ismail, to clearly betray their superiority to their African and Asiatic neighbors.—*Appleton's Journal*.

SELECTING A SCHOOL.

AT this time of the year parents are anxiously looking about for suitable schools for their children. Every variety of taste in this matter can be satisfied, if we may trust advertisements in the papers, and circulars sent by mail. One institution makes a specialty of teaching languages, another of mathematics, another of military drill, another of "manners," and so on. With so many schools to select from, the bewildered parent knows not where to choose, and often in perplexity takes the first that offers. It is, however, a matter of the gravest importance, one which should not be decided without thorough investigation.

There are the loud-mouthed "professors," who, having failed in business, have become teachers, employing in their profession the same methods which have made rich men of many manufacturers of quack medicines. Often these men have a certain gift of managing young people, a very necessary thing in a teacher, but not enough to make one a good instructor. From all such the parent should most carefully keep away. But to select one from among the honest teachers is not an easy matter. This one does not hold the right religious faith, that one is too strict, another not strict enough.

Obviously the best way is for the parent to first decide exactly what is wanted. The children must be studied,

their needs determined, and a place selected for them which will supply their wants. One child may be strong and hearty, another weakly. Do not think it necessary to send them both to the same school. The first can stand more study than the second. Let one go where he will have hard work, the other where the work will be lighter.

The importance of taking such things into consideration is so apparent, that it seems useless to make these suggestions, and yet they are every day ignored. If a school is good for John, it must be the right place for James, parents argue, though the two boys may differ in every important point.

There are too the moral wants of children, which must not be lost sight of. Parents who have studied character know that one child must be led with gentleness, another must be governed by authority, while another needs only a little help here and there to teach him to walk alone. Such needs as these must not be disregarded in selecting a guide for the most impressionable years of life. We begin to see now why it is a difficult matter to select a suitable school. One thing we must always keep in view, that our children are to be made honest, straightforward men and women, healthy in body, mind and soul.

But after the school is chosen, the parents' work is not done. There is more for the mother to do than to see that the children get off in time in the morning, more for the father to do than simply to pay the bills. Teaching is not to be left altogether to the teacher; parents must help. This they can do at home, by taking an interest in the lessons to be learned, and they can accomplish further good by visiting the school. The teacher is but the assistant of the parent, and it must be seen to that both are working in the same direction. The father may not find time to do much, but the mother can. She may have forgotten her French or arithmetic, but she can tell if her children are surrounded by good influences, if they are taught conscientiously, or superficially. The teacher too is encouraged to know that she has the parents' coöperation, and the pupils are proud to show the progress made since the last visit.

Some parents quiet their consciences for neglecting to visit the school by attending a yearly or half-yearly examination and exhibition. A good showing may be made on these occasions, but whether the advance made by pupils is real or only apparent, the parent has no means of knowing. The glib recital may be the result of a year of hard work, or it may be the product of a few weeks of "cramming." So we say to parents, that their responsibility is not ended when the children have been sent to a good school. There is still the work of advising, assisting and supervising to be done.

EVENING SCHOOLS.

THE evening schools of Pittsburgh, established last year, have been attended with such gratifying results that the Board of Education has determined to open several more of them. This is a wise determination. Every city, particularly in States which have no compulsory educational laws, should have its evening schools. They afford opportunities of education to large numbers of children who are compelled to work during the day time and enjoy no home educational advantages. Evening schools, furthermore, serve to keep many juveniles from idleness and from haunts of vice, which are always to be found in every large community. The check which they place upon growing crime is, in itself, a sufficient inducement to parents and taxpayers to support and maintain them, even though they do not send their children to them.

Evening schools present a good field for young gentlemen and ladies who are willing to engage in some philanthropic work. There are many such in every city, particularly young ladies, who would be only too happy to devote a few hours every week to the instruction of the poor. If school authorities do not feel warranted in employing regular teachers for night instruction, our word for it, they can, with a little effort, obtain plenty of volunteers. The experiment would be worth trying.

COLLEGE INTELLIGENCE.

IT is thought the accessions to Yale College, this term, will exceed four hundred.—Swarthmore College, Pa., has two hundred and fifty students, of whom about one hundred have just been admitted.—A letter from Trinity College, Conn., informs us that no new President has yet been elected.—Middlebury College, Vermont, classes have in full a membership of fifty-two.—The whole number of students in the regular collegiate department of Amherst is now three hundred and thirty.—Wesleyan College, Conn., has three young ladies in the Freshman class.—Female students are to be admitted to the Medical Department of California University.—The Freshman class of Williams, Mass., College numbers sixty; the largest for many years.—The new Smith College for women, at Northampton, Mass., will be opened in September, 1876. The conditions of admission will be similar to those of Amherst.—The Freshman class of Cornell University numbers one hundred and forty-five. Twelve new students were admitted to the upper classes. The tuition fee has been increased from fifteen dollars to twenty dollars a term.—The Union College Freshman class is larger this year than for a long time before.—The junior class in the Yale Law school numbers twenty-nine this year. This is the largest class ever entered there.—The new junior class of the Rochester Theological Institute numbers thirty students. There are more students this year than ever before. All but three or four of the students are college graduates. Eight are from Brown University, eight from Rochester, and two from Cornell.—A member of the junior class at Dartmouth College has fitted up his room as a barber's shop, and pays his way by shaving his fellow students.—There were one hundred and forty-three applications for admission to the Freshman class of the Michigan State University this year. Twenty-five were rejected.—The fourth story of the Vanderbilt University in Tennessee has been completed. A large number of mechanics and laborers are employed in constructing the building and the Professors' dwellings, and in improving the

grounds.—The Regents of the California University recommend that all applicants, male or female, who pass a satisfactory examination be admitted into the Medical Department.—Colorado College has opened with a full corps of instructors and a Freshman class of sixteen. Classes in Sanscrit and in Anglo-saxon are about being organized.—The name of Calvert College, Maryland, has been changed to New Windsor College.—The thirty Roman Catholic Parochial Schools in New York City afford instruction to twenty-seven thousand boys and girls.—A post graduate course in History and Political Science is to be established in Amherst College, with especial reference to fitting men for the "Science of Statesmanship."

EDUCATION IN RUSSIA.

HEREAFTER all the schools in Russia are to be placed under direct government control. In each district the control will be exercised by a school council, the councils to be composed of the marshal of the nobility, the school inspector and representatives of the Ministry of Education, the Ministry of Home Affairs and the Episcopal Diocese, two members of the District Assembly and one of the Municipal Council. The latest school statistics of Russia are for 1872, when there were [in European Russia] twenty-four thousand primary schools, with an attendance of eight hundred and seventy-five thousand pupils. There were 1081 preparatory and high schools, attended by 37,430 pupils, of whom 16,461 were boys and 21,789 girls. There were 126 gymnasia in which Latin, French, Greek and science generally were taught, and 32 progymnasia, attended by 42,751 pupils. The universities, of which there are now eight, have been organized on the German model. They employ five hundred and twelve professors and have 6,799 pupils. Nearly all of the latter are from the middle and poorer classes. This is not the case in other European countries, especially England.

CREAM OF THE EDUCATIONAL MONTHLIES.

"TEACHING *vs.* Cramming," in the *Connecticut School Journal*, notes a fact which instructors are prone to forget, the fact that teaching is a developing process. A desire for knowledge must first be awakened ; after this the teacher must direct the pupil in the attainment of facts. In thus directing the pupil, particular care should be taken that no subject is passed over before it is thoroughly understood. The plea, "I know it, but I cannot explain it," should never be accepted as satisfactory. A person who thoroughly understands a thing can explain it. Analogous to this is the necessity of having pupils understand the definitions of the rules and words they use. In short, each point should be thoroughly mastered before it is left to proceed to another. This may necessitate slow progress, but the advancement will be real and not merely apparent. "A New Method of Managing Classes at Recitation" suggests that those pupils who are bright, and soon finish their recitations, should be allowed to go to their seats to prepare other lessons, while the duller ones are kept until they understand the subject under discussion. The writer of the article shows a very commendable desire to teach the dull pupils as well as the quick-witted ones. There are, however, so many objections to the plan proposed, that we are not prepared to regard it as the best, or even as a good one. Other articles in the *Journal* are "The Study of English," and "Syllabication," both by Prof. Henry N. Day.

The *Maryland School Journal*, under the heading of "Eleemosynary Schools," administers a just rebuke to a local paper for speaking of public schools as charity schools. In some quarters there has been a prejudice against them, and occasionally parents have objected to sending children to them because it looked like living on public bounty. This feeling is, we are glad to believe, dying out. There is no just ground for it. The schools have a legitimate claim upon the public treasury, and those who use them are no more beneficiaries than are those who use the streets and bridges provided at the

public expense. A writer on "The Annual Election of Teachers" apparently regards the system as wholly bad. We do not think it is, though abuses have probably crept into it. The *Journal* contains a very dry report of the proceedings of the "Ninth Annual Session of the Maryland Public School Teachers' Association."

In the *Normal Monthly* the leading article, both in position and merit, is "System in Instruction." It sets forth the necessity of a logical system of teaching in advanced classes. The young child requires only facts, to the older child should be shown their relation to each other. One subject should logically lead to the next. In this way the mind is assisted in the acquisition and retention of knowledge, and facility is given for its reproduction, and for the evolution of original thought. Thus a thinking man is developed. The patchwork system, considering subjects without regard to their connection, evolves a mind which is simply a receptacle for the ideas of others. The *Monthly* also notes, under the heading of "School-master," the change in the manner of teaching which these latter years has developed. Formerly the pedagogue was a master, whose chiefest employ was the flagellation of his unhappy pupils, that is if we may believe the stories that come down to us. So unimpeachable an authority as Martin Luther, records that he was whipped fifteen or sixteen times during one forenoon. If such a good child as he—he must have been good, for is not "the child father to the man"—was thrashed so often, what must have been the sufferings of the ordinary run of boys? In these days the duty and aim of the pedagogue is not to *master*, but to *teach*. Many other subjects are discussed in the October number, among them "Cube Root of Binomial Surds," "A Snake in an Egg," and "Stepping-stones in English Literature."

The official department of the *Educational Journal of Virginia* gives some good hints to teachers. One is to abandon the use of the dictionary as a text-book, but to use it for frequent reference. Another is to try a few experiments in the way of conducting school. A new way of doing an old thing may benefit, simply because of its novelty. A com-

plete new set of methods should not however be adopted suddenly. Confusion is certain to result. One thing may be tried, and if it works, another may be introduced. Neighboring teachers might, with advantage, agree on a system of experiments, and report the result at periodical meetings. Still another article urges upon teachers the importance of map drawing, to fix in the mind of the pupil the shape of countries and states, and the location of cities, rivers and mountains. A map which can be drawn from memory is thoroughly learned, and there is no better test of knowledge in geography than this.

REFERENCE is elsewhere made to the importance of ventilating school-rooms. As cold weather approaches our school-house windows are closed, and the children are obliged to breathe impure air for four or five hours during the school day. There appears to be no intelligent effort to improve this state of affairs. Some time ago \$10,000 were appropriated to the New York Board of Education for experimenting, in order to discover the most effective means of ventilation. Little has been done, or at least little has been accomplished. The committee plead insufficiency of funds, and say that ten times the amount appropriated would be needed to carry out an adequate system of ventilation. If so large an amount is necessary, and if its expenditure would assure us of having our school-rooms well ventilated, it would be money well spent. The health of our large number of school children is of more value to us than the money it would require to give them fresh air.

It seems impossible to make school officers believe this. They apparently regard it as a thing of little moment whether air is pure or impure. The children, of course, make no protest. That parents do not take action to improve the state of affairs is strange enough, but that teachers should consent to spend five hours a day in a vitiated atmosphere, is "wonderful, wonderful, and most wonderful wonderful, and yet again wonderful, and after that out of all whooping."

CURRENT PUBLICATIONS.

"WHAT! the Devil!" was our first exclamation on reading the title page of the exquisitely printed pamphlet, "*Bibliotheca Diabolica*." Excuse us, reader, we are not swearing, but merely expressing our delight at finding that our old friend, *Henry Kernot, Esq.*, has, with infinite toil and pains, gathered such a large number of works on the literature of Diabolism (a very different thing, by the way, from Diabolical Literature, of which our daily and weekly papers have furnished us a surfeit for some months past) and arranged the catalogue of them so skilfully, with valuable descriptive notes, quaint proverbs, and choice illustrations depicting the ideals of his Satanic Majesty as conceived by all nations and in all times. Here are more than 520 distinct treatises on the "Devil and all his Works." If anybody needs to be thoroughly posted as to the arts, tricks, and ways of the Arch-devil and all his progeny, it is the teacher, and we can therefore with great heartiness recommend every teacher to purchase a copy of this dainty bibliographical monograph, and if they have any curiosity on the subject of the wiles of the Devil, to buy as many of these rare books as they can afford. Special bibliographies are plenty enough, but except Graesse's "*Bibliotheca Magica*," published in 1843, this is the only one in modern times which has dealt directly with the Devil and his works. No work of this kind can be absolutely perfect, but, as was to be expected from Mr. Kernot, who has well earned the title of a modern Dibdin, this is far more complete than any thing of the sort ever attempted. The pamphlet has an admirable index.

Mr. Cathcart's "Literary Reader," which we took pleasure in commending in these columns in October, has been pleasantly spoken of by the *New York Daily Times*. The writer in the *Times* concludes his article with some good advice, as follows: "A second edition would be improved also if it were made to contain fewer of the eccentricities of Noah Webster. It is quite time, in fact, that this gentleman should cease to be regarded as an authority on the English

language. He has done mischief enough." What adds point to this, is the fact that Mr. Cathcart's publishers are the New York publishers of Webster's Dictionaries.

Carlyle says that "the history of the world is but the biography of great men." The remark is especially true in regard to the German emperors. They exerted so powerful an influence upon their times that their personal histories and that of Germany resemble each other in many respects. To one therefore who wishes to obtain a clear idea of the growth and development of the countries subject to the German emperors, it is necessary to have a good history of those rulers. Such a work we have in the "History of German Emperors and their Contemporaries," by *Elizabeth Peake*. The record begins with Charlemagne and ends with the present emperor, William I. Short accounts of contemporaries of the emperors give the narrative continuity and completeness. Miss Peake is a clear, vigorous writer, and has thoroughly mastered her subject. The result is that we have an interesting, as well as an instructive book, on what has usually been considered rather a dry subject. The accounts of the different rulers are necessarily short, in order not to exceed the limits of an ordinary volume. So far as we have been able to observe, however, no important facts have been omitted. The book is handsomely printed and bound. Some good illustrations add to its interest and value.

"Beginning French" is a very good little book of easy sentences and reading lessons. Some space is given to teaching pronunciation, though as is remarked in the "Note to Teachers," books can hardly teach that. All depends upon patient, persistent drill. The book contains a vocabulary of familiar words, which should have been alphabetically arranged, some easy phrases, and the conjugation of *avoir* and *être*.

We are happy to know that the old time readers, those which aimed simply to teach the pupil what we may call the mechanical part of reading, are giving place to works which are arranged on more comprehensive principles. It is not now enough to teach children to glibly pronounce

words; expression and vocalization must be attended to. In short, pupils must be taught to read in such a way that they shall express the thoughts of the author in the clearest and most agreeable manner. A work which aims to do this, and which will, we think, accomplish it, is the "Franklin Sixth Reader and Speaker," compiled by *George S. Hillard* and *Homer B. Sprague*. The selections are taken from the writings of standard authors, and are so chosen as to present every variety of style. The work being intended for a speaker as well as a reading-book, contains a number of pieces of an animated and declamatory character. Several old favorites, like Gray's "Elegy" and Cowper's "Slavery," are wisely retained. They may, perhaps, be called hackneyed, but their merit and beauty are so great that we should be sorry to have them omitted.

Prof. Sprague prefaces the volume with a treatise on elocution, which, although contained in considerably less than one hundred pages, is very complete. He thoroughly understands his subject, and has given us a clear exposition of it. Short biographies of authors, from whose writings selections are made, add to the value of the book. The general appearance of the work, like that of all this series, is very pleasing.

The course of study of the South Missouri State Normal School, set forth in the catalogue of that institution, is more scientifically arranged than any we have yet seen. It is substantially based up the division of thought into two great lines, the one treating of all nature below man, and the other of man and his works. Subordinated to these are three other divisions; language, expressing the thoughts of science and philosophy; mathematics, as it weighs and measures science; and the graphic art, as a branch of language expressing form. Studies which are so connected that the elements of one are needed in the investigation of the other, are pursued at the same time, in order that intelligent progress may be made. In studying geology, for instance, chemistry is necessary in order to show the composition of the rocks, and botany and zoölogy, in order to interpret the meaning of the remains of organic life found in them. The

same system and thoroughness extend through the entire course of study. We recommend its perusal to teachers. These principles, if applied in ordinary schools, as far as may be, would be productive of great good.

MISCELLANEA.

THE growing interest in Educational matters is shown by the fact that the New York newspapers are establishing regular departments of education, and giving an attention to school matters for which they have never before allotted space.

THE number of pupils attending the Philadelphia public schools during the past year was 100,749. The total cost of maintaining the schools was \$1,429,693.

IT is proposed to introduce the Kindergarten system into the public schools of Milwaukee.

THE experiment of teaching sewing in the Boston public schools generally is to be tried. Since last October sewing has been taught to 1,200 girls in the Winthrop school, and with great success. Each class receives separate instruction suited to its advancement.

THE removal of buildings for the erection of the new Peabody Museum at Yale is ended, and the work of laying the foundation of the new edifice begun. Only one wing will be erected at present, but this will be an imposing building of itself. The height of the walls will be about seventy feet. The museum, when the entire work is completed, will include a main building with a wing at each side.

IT has been decided by a County Court Judge that the North-Western University, Illinois, is not exempt from taxation, being an institution used for profit.

A TRAINING school for teachers is to be established in connection with the New York Normal College.

THE New York city evening schools opened Monday, Oct. 5th. The term continues eighteen weeks. No pupil under twelve years of age is admitted.

FRENCH is to be taught in the Eastern and Western High Schools for girls in Baltimore.

PHILADELPHIANS are discussing the advisability of having only one school session daily, instead of two as at present.

AT Chauncy Hall School, Boston, pupils whose health is delicate take only half the studies of the class during the year. The next year, instead of being promoted, they remain in the class and take the other half. As the reason for not being promoted is generally understood, there is no mortification in being left behind.

THE Freshman Class at Bowdoin, this year, is unusually small, numbering only twenty-two members. The students are now allowed to choose between the military drill and the gymnasium. The Seniors and Juniors have unanimously chosen the gymnasium, and so many of the Freshmen and Sophomores have made a like choice that the battalion contains only three men.

A GEORGIA paper says that the negroes in that State enjoy every advantage which is afforded the whites; their school buildings and furniture are as good, and they have good teachers and suitable courses of education.

IN the High School at Dover, N. H., pupils are examined at regular intervals on topics of the time, involving a careful reading of the newspapers.

NEW YORK CITY has the only school in the United States for the practical teaching of veterinary science, though it is true there are chairs in some of our agricultural colleges for theoretical instruction in this branch of knowledge. In no country are such schools more needed.

THE *Nashville Banner* hopes that the coming Legislature of Tennessee will not yield to the advice now being given, to cut away the county supervision.

NUMBERS of children of Roman Catholic parents have been recently removed from the Cincinnati public schools.

THE report of the Board of School Visitors of Memphis, Tenn., states the whole number of white children of school age to be 6,479; of colored, 3,902; the average white attendance to be 2,892; average colored attendance, 657.

REFERRING to the study of history, a speaker said at a recent Maine Teachers' Institute: "We have too large textbooks, and teach our pupils to memorize too exclusively. In Vermont we give but sixty pages of our school textbooks to the history of the United States. We should give the leading facts or dates in the history of our country, and if possible learn the causes which contributed to produce them. With these general data, and the reasons of them, the pupils should be made as familiar as possible."

A SUB-COMMITTEE of the Elmira Board of Education takes ground against too much stimulating in schools, and believes "that if all the mere physical ills which grow out of competition for prizes and class honors, including a widespread spirit of emulation, could be revealed to the scrutiny of School Boards as they are exhibited to medical men in the forms of impaired appetite, indigestion, headache, sleeplessness, impoverishment of the blood, etc., the system which fosters and encourages such unnatural exercise of mind and body among young, undeveloped and growing children, would yield to a more rational method of education.

HON. James M. Barnard writes that up to Oct. 10th he has received, as treasurer of the Agassiz Memorial Fund, \$8,844, and that he has reason to expect other contributions. Several small sums have been sent in since the opening of the schools in September. We hope that those schools which have not yet contributed to this fund will do so at once. The amount sent need not be large in order to show an interest in the object.

"YOUR handwriting is very bad indeed," said a gentleman to a friend more addicted to boasting than to study; "you really ought to learn to write better." "Aye, aye," replied the young man, "it is all very well for you to tell me that; but if I were to write better, people would find out how I spell."

PUBLISHERS' DEPARTMENT.

ALL must admit that "Object Teaching" is far more successful than it is possible to make the antiquated method of using text-books alone.

School officers and teachers desiring to adopt the easiest and most successful method of teaching History are referred to the advertisement of F. R. Reed & Co. on another page of this journal.

Their charts may be seen at J. W. Schermerhorn & Co.'s, 14 Bond St., New York.

Educational Notes and Queries.—A periodical with the above title will be published as soon as the number of subscriptions received shall be sufficient to defray the cost of publication. It will contain matter that will interest all classes of teachers, from those in the primary schools to professors in colleges and universities. The notes will be upon the different branches of study pursued in all these grades of schools. Especial attention will be given to language notes, including provincialisms and the spelling and pronunciation of words. Queries will be proposed in mathematics, language, pedagogy, the physical and metaphysical sciences, history, etc., and will receive such answers as the editor and his correspondents may be able to give.

EDUCATIONAL NOTES AND QUERIES will be a sixteen-page octavo, exclusive of advertisements, issued monthly, except in the vacation months of July and August, at One Dollar a year. Address W. D. Henkle, Salem, Ohio.

We can find space for only a few of the commendations of **Masterpieces in English Literature**, received during the past month.

Andrew D. White, LL.D., Pres. Cornell University: "I find it in all respects admirable. It is evidently the result of close study of the needs of instructors, and those to be instructed. I had expected much, but the book surpasses my expectations."

W. T. Harris, Supt. Schools, St. Louis, Mo.: "From an examination of it I am persuaded that the series will make a new epoch in the study of English Literature and in the mastery of its grammatical forms. Its happy combination of philological and syntactical work with the study of entire works of art—the gems of the greatest writers of the language—insures for it a great success."

Rev. Samuel Lockwood, School Commissioner Monmouth Co., N. J.: "It is a magnificent book. I think the exercises in it are admirable for teachers as well as pupils."

Prof. T. S. Doolittle, Rutgers College: "This volume puts within immediate reach of the student an immense amount of information which could not otherwise be secured, without the aid of an expensive apparatus and much independent research. I shall adopt the Masterpieces at once as a text-book in my department."

N. Y. Tribune: "The work cannot fail to be of great value by the copious learning, sound judgment and excellent taste evinced in its preparation."

Daily Graphic: "The collections are made with taste and judgment."

Evening Mail, N. Y.: "We have here what are undoubtedly in brief the finest representative works of our early literature."

Published by J. W. Schermerhorn & Co., 14 Bond St., New York.

Sprague's New Composition Paper is admirably adapted to its purpose. Lucian Hunt, Prin. Law. Academy, Falmouth, Mass., says: "I think very well indeed of your specimens of Composition Paper, and when I can conveniently do so I intend to introduce it into my classes." Published by J. W. Schermerhorn & Co., 14 Bond St., New York.

L. W. Mason, Boston, Mass., says of the **Art of Reading Music**: "I believe the work is destined to do much good in the art of reading music, and is especially adapted to private as well as public schools." Published by J. W. Schermerhorn & Co., 14 Bond St., New York.

The favorable notices of **How to Teach**, received since our last issue, are crowded out this month. Arrangements are being made to republish the work in England.

Canvassers Wanted.—Canvassers wanted for T. De Witt Talmage's family and religious paper, **The Christian at Work**, C. H. Spurgeon, special contributor. Sample copies and terms sent free. Office 102 Chambers St., N. Y. See the advertisement.